

Application No.: 10/055,499

Docket No.: JCLA8534-R

REMARKS

Reconsideration and allowance of the application and presently pending claims are respectfully requested.

1. Present Status of the Application

Upon the entry of the amendments in this response, claims 204-280 are pending in the present application. More specifically, claims 1-203 are canceled; claims 204-280 are newly added. It is believed that the foregoing additions add no new matter to the present application.

2. Response To Objections/Rejections

Applicants respectfully traverse the rejections for at least the reasons set forth below.

Response To Claims 204-232

The newly added claim 204 reads as:

204. A chip packaging method comprising:
providing a substrate comprising an organic material;
joining multiple dies and said substrate;
depositing a metal layer over said dies; and
cutting said substrate.

(emphasis added)

Eichelberger et al. (US 6,396,148) disclose that multiple dies are joined with a substrate, a metal layer can be formed over the dies, and the substrate can be cut. Eichelberger et al. fails to teach, hint or suggest that the substrate comprise an organic material. Saito et al. (US 5,049,980), Wachtler et al. (US 6,274,391) and Marcinkiewicz (US 6,025,995) disclose that one or more dies

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can be joined with a substrate comprising an organic material and a metal layer can be deposited over the one or more dies but fail to teach, hint or suggest the substrate can be cut.

Applicants teaches the concept that the substrate comprising an organic material can be cut, which is not taught by Eichelberger et al., Saito et al., Wachtler et al. and Marcinkiewicz. Generally, an organic material can be cut more quickly than other material, such as ceramic, metal or the like. An organic material can be cut with relatively high cutting speed, so the processing time for cutting a substrate comprising an organic substrate can be saved.

Eichelberger et al. fail to teach that the substrate comprises an organic material, so the above improvement can not be attained by Eichelberger's method. Applicants consider that an improvement that escaped those who came before should be indicative of unobviousness. Besides, even though Saito et al., Wachtler et al. and Marcinkiewicz teach that the substrate may comprise an organic material, they fail to teach, hint or suggest the motivation that the substrate can be cut. Therefore, the improvement can not be attained by Saito's, Wachtler's, and Marcinkiewicz's methods.

For at least the foregoing reasons, applicants respectfully submit that the independent claim 204 patently define over the prior art references, and should be allowed. For at least the same reasons, dependent claims 205-232 patently define over the prior art as well.

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Response To Claims 233-254

The newly added claim 233 reads as:

233. A chip packaging method comprising:
providing a die having at a first pad;
depositing a metal layer over said die, said metal layer having a second pad, wherein said second pad is electrically connected to said first pad, and *said second pad has a layout different from that of said first pad*; and
depositing a bump over said second pad, wherein *said bump has a principal material comprising gold*.

(emphasis added)

Saito et al. (US 5,049,980), Wachtler et al. (US 6,274,391), Marcinkiewicz (US6,025,995) and Eichelberger et al. (US 6,396,148) fail to teach a bump having a principal material comprising gold can be deposited over a second pad that has a layout different from that of a first pad of a die. Applicants consider that those skilled in the art can not anticipate the claimed method in claim 233 because the emphasized subject matters are not taught by Saito, by Wachtler, by Marcinkiewicz and by Eichelberger.

For at least the foregoing reasons, applicants respectfully submit that the independent claim 233 patently define over the prior art references, and should be allowed. For at least the same reasons, dependent claims 234-254 patently define over the prior art as well.

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Response To Claims 255

The newly added claim 255 reads as:

255. A chip packaging method comprising:
joining a die and a substrate; and
depositing a bump over said substrate, wherein **said bump has a principal material comprising gold.**

(emphasis added)

Saito et al. (US 5,049,980), Wachtler et al. (US 6,274,391), Marcinkiewicz (US6,025,995) and Eichelberger et al. (US 6,396,148) fail to teach a bump having a principal material comprising gold can be deposited over a substrate to which the die is joined. Applicants consider that those skilled in the art can not anticipate the claimed method in claim 250 because the emphasized subject matters are not taught by Saito, by Wachtler, by Marcinkiewicz and by Eichelberger.

For at least the foregoing reasons, applicants respectfully submit that the independent claim 250 patently define over the prior art references, and should be allowed. For at least the same reasons, dependent claims 251-269 patently define over the prior art as well.

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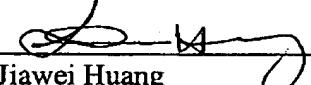
CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 204-269 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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Respectfully submitted,
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